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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.    | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------|------------------|
| 10/534,199  | 10/16/2006  | Bernard Aspar        | 9905-25 (BIF023239/US) | 1400             |
| 757 7590 02/19/2009<br>BRINKS HOFER GILSON & LIONE<br>P.O. BOX 10395<br>CHICAGO, IL 60610 |             |                      |                        |                  |
| EXAMINER  |             |                      |                        |                  |
| SMITH, BRADLEY  |             |                      |                        |                  |
| ART UNIT  |             | PAPER NUMBER         |                        |                  |
| 2894  |             |                      |                        |                  |
| MAIL DATE   |             | DELIVERY MODE        |                        |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/534,199

**Applicant(s)**

ASPAR ET AL.

**Examiner**

Bradley K. Smith

**Art Unit**

2894

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 May 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- Paper No(s)/Mail Date 9/24/07, 3/1/07, 1/29/07, 5/6/05
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 8, 9, 18, 21 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claims 8, 9, 21 and 22, the claims do not disclose what the thermal budget is for initiating a fracture. One does not know the value the heat treatment budget needs to be lower than that which would be necessary to initiate fracture. The examiner will not address these claims with respect to the prior art.

Regarding claim 18 what is a flexible or rigid support? (How does one determine what is flexible and what is rigid? Where is the delineation between the two?)

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4-7, 10, 13-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Mistubishi (JP 11087668). Regarding 1 and 17, Mitsubishi disclose a) implanting a first chemical species (He) in the substrate at a first depth at least one b) implanting at least one second chemical species (H) in the substrate at a second-depth different from said first depth and at a concentration higher than the concentration of the said first chemical species [0012], wherein

said at least one second chemical species is less effective than said first chemical species at weakening the substrate, and wherein said steps a) and b) can be executed in either order (inherent), c) diffusing at least a portion of said at least one second chemical species from said second depth up to the vicinity of said first [0017], and d) initiating said fracture along said first depth [0022]. Regarding claims 4 and 19, the second chemical species can be preformed before the first chemical species (table 1, example 9). Regarding claim 5, Mitsubishi disclose the said diffusing at least a portion of said second chemical species is further comprises applying a heat treatment [0017]. Regarding claim 6, Mitsubishi disclose said initiating said fracture further comprises applying a heat treatment [0021]. Regarding claim 7 and 20, Mitsubishi disclose the diffusing and initiation occur simultaneously [0021]. Regarding claim 10, Mitsubishi disclose furnace heating [0017]. Regarding claim 13, Mitsubishi disclose during initiating said fracture, a thickener is applied to the said substrate to serve as a support for said thin layer after said fracture of said thin layer from the said substrate (fig. 2). Regarding claim 14, Mitsubishi disclose a handle support (fig 1e, element 12) applied to the substrate. Regarding claim 15, Mitsubishi disclose the first species is hydrogen (table 1, example 9). Regarding claim 16, Mitsubishi disclose one species is a rare gas (He). Regarding 18, Mitsubishi disclose "rigid" support (fig 1e, element 12) underlying the thin layer.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsubishi (JP 11087668) in view of Wang (US Patent 4,956,698). Mitsubishi disclose a) implanting a first chemical species (He) in the substrate at a first depth at least one b) implanting at least one second chemical species (H) in the substrate at a second-depth different from said first depth and at a concentration higher than the concentration of the said first chemical species [0012], wherein said at least one second chemical species is less effective than said first chemical species at weakening the substrate, and wherein said steps a) and b) can be executed in either order (inherent), c) diffusing at least a portion of said at least one second chemical species from said second depth up to the vicinity of said first [0017], and d) initiating said fracture along said first depth [0022]. Mitsubishi does not disclose the second species implanted at a depth either greater or less than the first depth . However Wang disclose that it is well known to control the depth of the implanted ions. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Mitsubishi and Wang because controlling the implant depth of the second species would allow one to control where the fracture occurs.

Claim 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mitsubishi (JP 11087668) in view of Chu (US Patent 6,774,010). Mitsubishi disclose a) implanting a first chemical species (He) in the substrate at a first depth at least one b) implanting at least one second chemical species (H) in the substrate at a second-depth different from said first depth and at a concentration higher than the concentration of the said first chemical species [0012], wherein said at least one second chemical species is less effective than said first chemical species at weakening the substrate, and wherein said steps a) and b) can be executed in either

order (inherent), c) diffusing at least a portion of said at least one second chemical species from said second depth up to the vicinity of said first [0017], and d) initiating said fracture along said first depth [0022]. Mitsubishi does not disclose using mechanical stress (jet fluid) to initiate a fracture in the wafer. However Chu discloses using a water jet to initiate a fracture in the wafer (col. 3 lines 35-50). Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Mitsubishi and Chu because the jet fluid would separate the wafer.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bradley K. Smith whose telephone number is 571-272-1884. The examiner can normally be reached on 10-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Nguyen can be reached on 571-272-2402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Bradley K Smith/  
Primary Examiner, Art Unit 2894